

IN THE CLAIMS

We claim :

1. A device having Input/Output (I/O) connections to a package or board comprising :
bond pads,
BLM disposed over said bond pads, said BLM having two or more segments, and
a bump disposed over said segments.
2. The device of claim 1 wherein said bump comprises solder such as Lead-Tin (Pb-Sn) or Lead-Indium (Pb-In).
3. The device of claim 1 wherein said bump does not comprise Lead (Pb).
4. The device of claim 1 wherein said bump comprises a ternary alloy such as Tin-Silver-Copper (Sn-Ag-Cu).
5. The device of claim 1 wherein said bump comprises an Electrically Conductive Adhesive (ECA) or polymer.
6. The device of claim 1 wherein said BLM provides a diffusion barrier to metals.

7. The device of claim 1 wherein said BLM comprises a lower layer and an upper layer.
8. The device of claim 7 wherein said lower layer comprises Titanium (Ti) with a thickness of about 200 to 1500 Angstroms.
9. The device of claim 7 wherein said upper layer comprises Nickel-Vanadium (Ni-V) with a thickness of about 1000 to 8000 Angstroms.
10. The device of claim 1 wherein said segments comprise a substantially polygonal layout.
11. The device of claim 1 further comprising vias, wherein a segment is electrically connected to two or more of said vias.
12. The device of claim 11, wherein said vias are laterally offset from a center of said bump to which they are electrically connected.
13. The device of claim 11 wherein said vias comprise a substantially polygonal layout.
14. The device of claim 4, further comprising bond pads, wherein a segment is electrically connected to two or more of said bond pads.
15. The device of claim 14 wherein said bond pads are laterally offset from a center of said bump to which they are electrically connected.

16. A method of forming a segmented BLM on a device comprising :

forming a top metal layer of said device, said top metal layer comprising lines with bond pads;
forming a passivation layer over said top metal layer;
etching vias through said passivation layer to expose said bond pads;
forming a BLM over said vias,
separating said BLM into segments, such that each segment covers at least one of said vias;
forming a bump on said segments of said BLM; and
connecting said bump to a package or a board.

17. The method of claim 16 wherein said BLM comprises a lower layer and an upper layer.
18. The method of claim 17 wherein said lower layer comprises Titanium (Ti) with a thickness of about 200 to 1500 Angstroms.
19. The method of claim 17 wherein said upper layer comprises Nickel-Vanadium (Ni-V) with a thickness of about 1000 to 8000 Angstroms.
20. The method of claim 16 wherein said bump comprises solder which is electroplated through a photoresist mask and reflowed after the photoresist is removed.
21. The method of claim 16 wherein said bump comprises solder such as Lead-Tin (Pb-Sn) or Lead-Indium (Pb-In).

22. The method of claim 16 wherein said bump does not comprise Lead (Pb).
23. The method of claim 16 wherein said bump comprises a ternary alloy such as Tin-Silver-Copper (Sn-Ag-Cu).
24. The method of claim 16 wherein said bump comprises an Electrically Conductive Adhesive (ECA) or polymer.
25. The method of claim 16 wherein said bump comprises a Silver-filled epoxy.

26. A device having I/O connections to a package or board comprising :
a bond pad, said bond pad having two or more segments, and
a wire lead attached to said segments.
27. The device of claim 26 further comprising vias, wherein a segment is electrically connected to two or more of said vias.
28. The device of claim 26 further comprising lines, wherein a segment is electrically connected to two or more of said lines.